

524,762

Rec'd PCT/PTO

15 FEB 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
4 March 2004 (04.03.2004)

PCT

(10) International Publication Number
WO 2004/018400 A1

- (51) International Patent Classification⁷: **C07C 29/42**, 33/042
- (21) International Application Number: PCT/EP2003/008867
- (22) International Filing Date: 9 August 2003 (09.08.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02018458.6 16 August 2002 (16.08.2002) EP
- (71) Applicant (for all designated States except US): **DSM IP ASSETS B.V.** [NL/NL]; Het Overloon 1, NL-6411 TE Heerlen (NL).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **BONRATH, Werner** [DE/DE]; Luckenbachweg 29, 79115 Freiburg (DE). **SCHEER, Peter, L.** [DE/CH]; Baeretstrasse 2a, CH-3930 Visp (CH). **TSCHUMI, Johannes** [CH/CH]; Schmittenstrasse, CH-3937 Baltschieder (CH). **ZEN-HAEUSERN, Reto** [CH/CH]; Hauptstrasse, CH-3937 Bltschieder (CH).
- (74) Agent: **MUELLER, Ingrid**; Roche Vitamins Ltd., Patent Department (VMD), Wurmisweg 576, CH-4303 Kaiseraugst (CH).
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**
- with international search report
 - before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ETHYNYLATION PROCESS

(57) Abstract: A process for the manufacture of an acetylenically unsaturated alcohol comprising reacting formaldehyde, an aldehyde or a ketone (a carbonyl compound) with acetylene in the presence of ammonia and an alkali metal hydroxide, the molar ratio of the alkali metal hydroxide to the carbonyl compound being less than 1 : 200. The reaction products, which depending on the starting carbonyl compound are propargyl alcohol or 1-monosubstituted or 1,1-disubstituted derivatives thereof, are of use as intermediates in the synthesis of many useful end products, inter alia in the field of vitamins and carotenoids.

WO 2004/018400 A1